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Wherein it is proved, in the clearest Manner,
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T H E O N L Y T R U E W A Y W H E R E B Y M A N K I N D C A N
R E C E I V E A N Y R E A L B E N E F I T F R O M T H E
S T U D Y O F T H E H E A V E N L Y B O D I E S.

By J O H N C U N N I N G H A M. K

The works of the Lord are great, sought out of all them that
have pleasure therein. *Psalms* xci. v. 2.

L O N D O N:

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1789.

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THE CONFERENCE SYSTEM

MEMORANDUM OF THE NEW YORK CONFERENCE

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TO THE READER.

THE following Treatise aims at truths of the most sublime nature, which the most exalted powers of the human mind are incapable fully to illustrate; yet, notwithstanding their sublimity, common understandings, properly exercised, may enter deeply into, and draw much comfort and satisfaction from, them. I must confess my insufficiency for such an undertaking; but as it is allowable for children and idiots rapturously to survey any object that is presented to their view, and thus to call the attention of others to behold and partake of the pleasures they enjoy, I have, from the same motives, presumed to publish my thoughts, hoping the candid reader will overlook

overlook all the weakness of the instrument, and examine and weigh well the facts touched upon, and strike a fair balance. Plain truth needs not human embellishment; though it is the general taste of the times to have every thing that appears in public dressed up in good language; if this be wanting, it is deemed unfavoury, and the cook is condemned, notwithstanding the dish may contain the most wholesome food: but if it is thus adorned, though the contents be nothing but chaff, it is swallowed down with greediness. This little Treatise being composed of common plain reasons, founded on truths of the greatest importance, I trust the candid reader into whose hands it may fall will fairly examine, who may perhaps see more into those facts I have, as it were, but hinted at, than I can, though he might never have beheld them in the same point of view before. I therefore hope such will not condemn my performance before examination, because contrary to the general opinion of the scientific; but will bring my arguments to the touchstone or proper standard of reason, or the Scripture. The evidences I have adduced to prove the truth

of my hypothesis, let them be tried by reason; those I have used to prove, that the books of Nature, Providence, and Revelation, all declare one and the same truth; that is, that Christ is God, or the doctrine of the Trinity in Unity, I wish to have tried by the Scriptures, and reason also, because they contain what is consonant thereto. I have not attempted to treat of the doctrine of the Trinity, but have only endeavoured to impress on the minds of my readers, that all the works of God, both in creation and providence, prove the Scriptures to be his revealed word. As to the doctrine of the Trinity, they who desire to be instructed in this Divine mystery, I would refer to the works of those servants of God who have treated on that subject; particularly a sermon preached at the merchants' lecture, in the meeting-house, New Broad-street, on Tuesday, March 24, 1789, a copy of which, if it was printed, I could wish might be read by every person who denies or doubts this fundamental truth.

I would have cheerfully submitted my thoughts to some skilful person for correction, but my obscure situation, in a great measure,

sure, deprived me of that opportunity. Yet, considering that truth will always appear comely in its native simplicity, however destitute of human ornament, I have, from the importance of the subject, prevailed on myself to rest my performance on the candour of the public, trusting it may meet with that improvement from the hands of others which could not be expected from their

Humble servant

And well-wisher,

JOHN CUNNINGHAM.

Grove-street, Deptford.

INQUIRY, &c.

HAVING had, for many years, some doubts respecting the earth's annual revolution round the sun, the elevation of the poles continually being the same to me hath been an insurmountable difficulty; and, notwithstanding the opinion of learned men, and their exact calculations as to the conjunctions and of the heavenly bodies, and the concurrence of persons of science of every age and country, I could not but conclude that there must be an error somewhere. I knew that all the works of God were perfect; I was also satisfied that as to knowledge all mankind were imperfect; therefore, seeing that all things are liable to error, and following the maxim—never to receive any thing as a truth from the authority of any one, without it carries its own evidence with it—if the matter be relating to nature, then, if reason supports it, I have the greatest obligation to receive it as truth; if it be of a spiritual nature,

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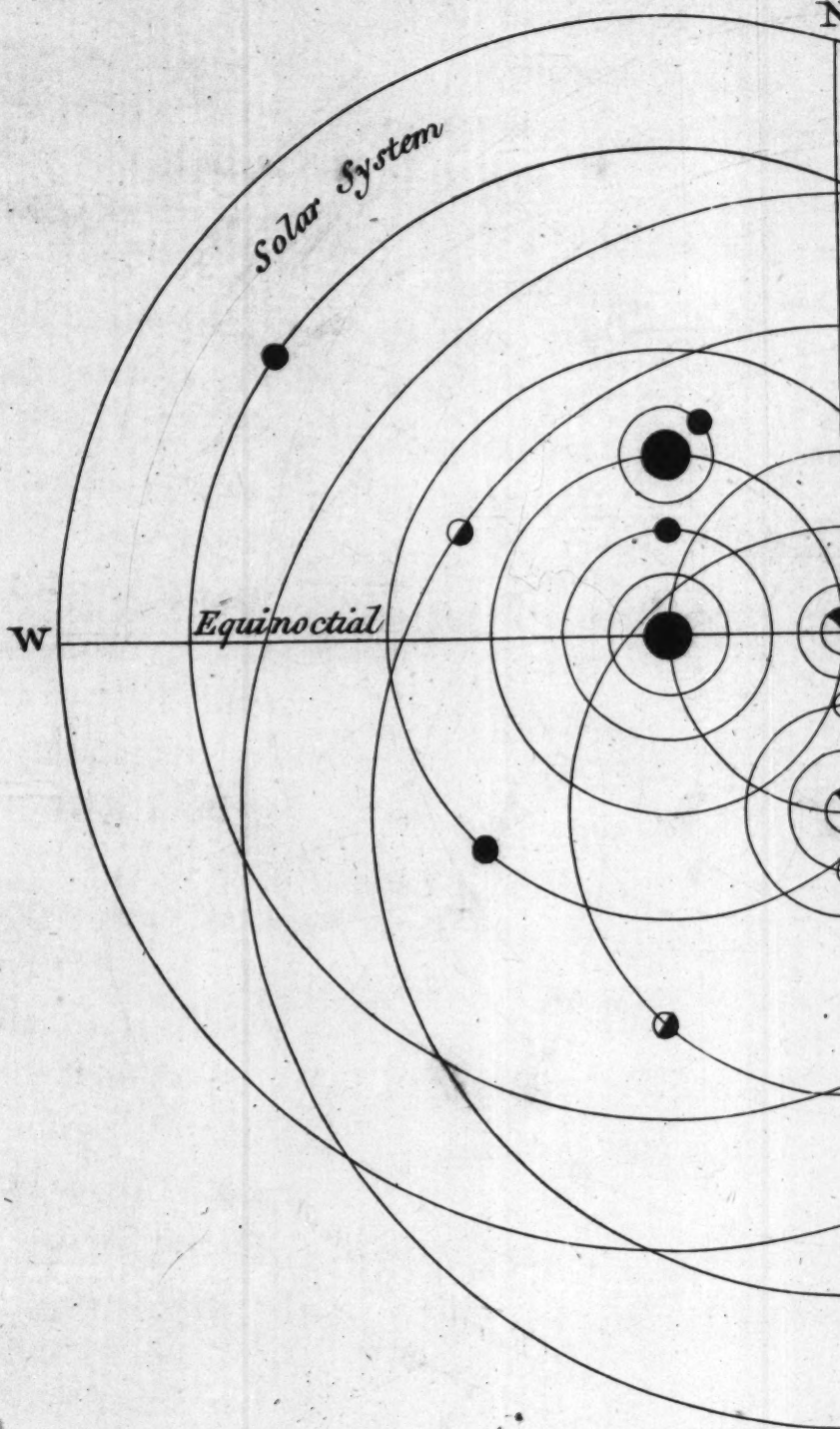
ture, then, if it hath the scriptures to confirm it, I have the authority of the scriptures to consider it as certain.—On these principles I set out to endeavour to come at the knowledge of the true motions of the heavenly bodies and that of the earth also; and, after the most diligent search I have been able to make into the Copernican system, I cannot find any support it hath, in common sense, for the exactness of the planets, periods, &c. Every other proof it pretends to have is not supported by reason, but clashes with it, as, I trust, will appear, from clear and evident demonstration, in the ensuing work, to every dispassionate reader who will give himself the trouble properly to weigh them.

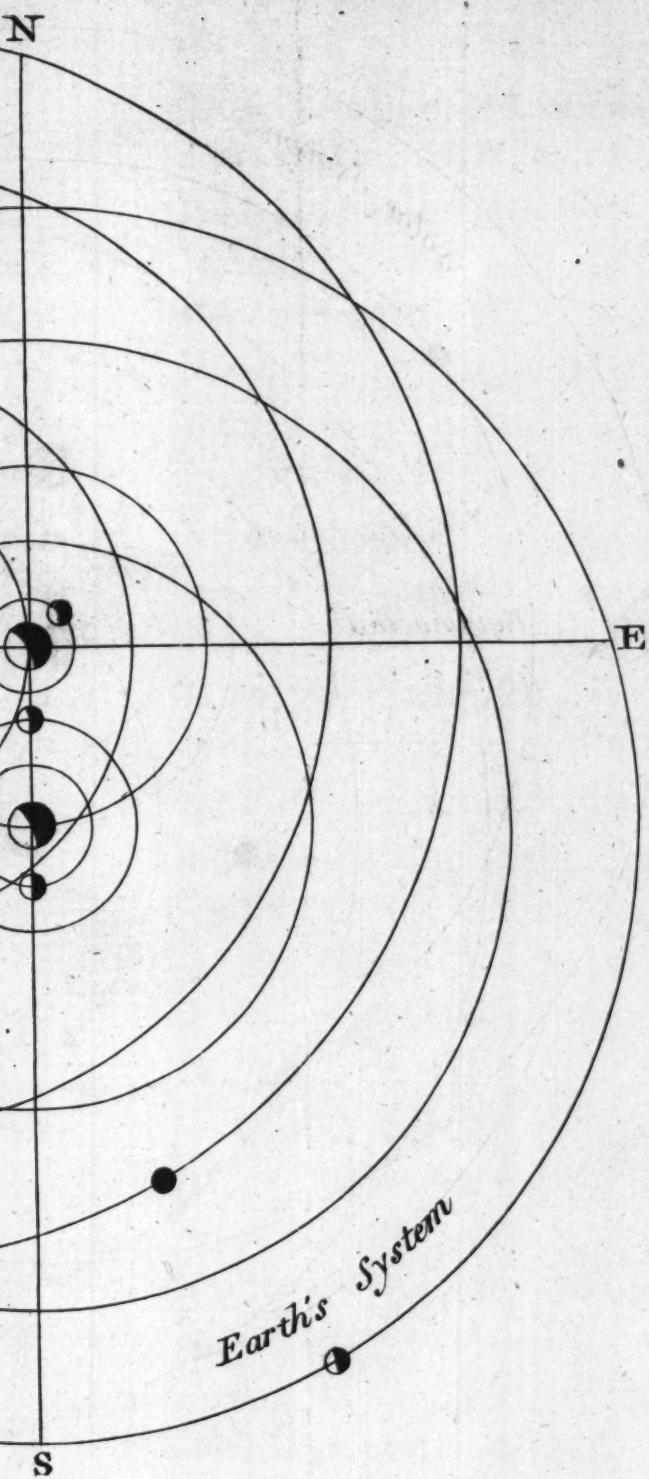
In order that I may be as concise as possible, I shall begin with my own hypothesis, and contrast it with the other as I proceed. In the first place, I believe the centre of gravity to be fixed directly between the two poles; that all the matter, of which the globe, with its atmosphere, consists, gravitates to this centre, and that round it the earth hath its continual motion, and moves once round its axis in 23 hours 56' and 4": other motion than this, it appears, from the clearest evidence, it hath none.

none.—Therefore, as the different seasons of the year are produced either by the motion of the sun or earth, I am persuaded, from the clearest proofs demonstrated from reason, that the sun doth really, as well as apparently, revolve round the earth; that the centre of the earth's gravity is likewise the centre of the sun's orbit; this orbit of the sun is exactly the same from the equinox as the supposed earth's orbit; in this orbit the sun moves $59^{\circ} 8''$ every 24 hours; as the sun's motion is obliquely from west to east, and his daily progress being $59^{\circ} 8''$, just $59^{\circ} 8''$ doth the earth go more than once round her axis in 24 hours, which she performs, in $3^{\circ} 56''$. These two motions, that is, the sun's annual and the earth's diurnal motions, account for the phenomena of nature respecting the signs in the zodiac, the sun's place, the precession of the equinoctial points, &c. with more certainty than the Copernican system doth with the earth's supposed threefold motions. As to the motions of the planets, it appears they have the sun for their centre; so that, while they are revolving round the sun in their orbits, the sun is revolving round the earth in his orbit. The sun's orbit, or the ecliptic, being invariably fixed, the sun being the centre of

the orbits of the planets, these are constantly varying as the sun is continual in his motion: therefore the sun in his orbit, and the planets in theirs, are always in the same position with the earth, now fixed as to annual motion, as they are when the sun is supposed to be fixed, and considered as the centre of the earth's orbit, as well as the planets; and thus each hypothesis answers exactly the same with respect to the times of the conjunction and opposition, &c. of the planets; as figure the first, I think, will clearly prove.

In order to explain this figure, that it may appear in the clearest point of view, I have drawn an equinoctial line from east to west, another, at right angles, from north to south, that is, as supposed, from pole to pole: where these lines intersect, I have described the earth, with the moon; on the equinoctial line, I have described the sun, with all the planets in their orbits; the earth is likewise in her supposed orbit, though I have described her between the poles. I then take the distance from the centre of the earth to the centre of the sun for a radius, and describe the orbit of the sun; I then, according to the Copernican system, suppose the earth to be in motion, departed from the equinox, and arrived at 90° ,
the





the lower part of the orbit; then, at that instant, I suppose her to stand still; then I suppose the sun, moon, and all the planets, in the same position, as described by the black spots, according to the solar system; then I suppose the earth to be fixed, and the sun to move and to depart from the equinox at the same instant, and arrive at the 90° upward, or the upper part of the orbit, at the time the earth was supposed in the like situation; then will the sun be due south of the earth, and the moon and every planet be exactly in the same position in the one system as the other, which, I think, is a full proof that the Copernican system may be wrong; and, if it hath nothing else but the exact calculations of the periods of the conjunctions, oppositions, &c. of the heavenly bodies to support it, which, I think, appears demonstrably clear it hath not, it certainly is wrong.

I come now to give some undeniable circumstances, that clearly prove that the sun is not the centre of the system, but that he moves round the earth.—First, The earth cannot move round the sun in an orbit of such vast extent, and have her poles always in the same direction to the poles in the heavens; for, if

the north pole of the earth be directed to the same pole in the heavens, while she moves in her orbit her south pole must be directed toward the south-east, if she be in the east part of her orbit, but if in the west part, then to the south-west. This is supposing the sun to be fixed in a direct line between the poles; otherwise, if the sun be supposed to be fixed, the distance of the sun from the earth, on one side of a direct line, imagined to pass from pole, and the sun being on the west of that line, then, at the time the earth is in the east part of her orbit, her axis would be due north and south; but, when the earth is in the west part of her orbit, her axis, when pointing to the north pole in the heavens, the south pole of the earth, would be direct from the north pole, south-west and by south. But this last supposition is so vague and uncertain that I cannot think men of science, who consider what they say, will affirm it, though I have met with one who asserted that the sun was not in a direct line between the poles in the heavens. But let the sun be supposed to be fixed according to either, what I have said would be the case, which I prove thus: first, I suppose that though the poles of the heavens
 extend

extend *ad infinitum*, I likewise conjecture that their influences both meet in the centre of the earth, and that there is a certain point of intersection, to which the eye is directed from the different meridians of the earth, which point of intersection is at the same distance from the earth as the sun is, which is a demonstration evidently clear; for, when the sun is in the equinox, to a person on the equator, beholding the sun in the horizon, his antipode, and two more, one under each pole, these four would behold the sun in the horizon at one and the same instant of time; likewise to four persons, one on each quarter of the equator, the poles will be in the horizon to each of them; therefore, as the person who is on the equator, if he travel north till he bring the pole in his zenith, every degree he travelled so much would the pole be elevated, till he brought the pole to his zenith; so likewise a person on the equator, when the sun is in the equinox, and he beholds the sun in the horizon, and remains till the sun is in his zenith, every degree the sun rises, so much is the sun elevated to him till it is in his zenith. Or, for a further illustration, suppose both the sun and the earth to be fixed, while the person on the equa-

tor, who beholds the sun in the horizon, travels east to bring the sun in his zenith, then every degree he travelled, so much would the sun be elevated, until he reached ninety degrees, when the sun would be in his zenith.

—From all which it appears, in the clearest manner, that the sun and poles in the heavens are at nearly the same distance from the earth.

Again, with respect to the motion of the sun; to a spectator on the equator, when the sun is in the equinox, and he beholds the sun in the horizon, if the poles were as visible as the sun, he and his antipode might behold the sun and both the poles in the horizon at the same time, at equal distance from them, the one north, the other east, the other south; consequently the sun must be at right angles with the poles, and so they continue all the day, and likewise all the year; for, though it appears more clear to our view while the sun is in the horizon, when we consider that the sun is always in that position to one part of the equator or other all the revolution, it will manifestly appear that he is at right angles with the poles all the year: when the sun is in the equinox, both legs of the angle are equal, but in his declination the legs of the
angle

Plate II.

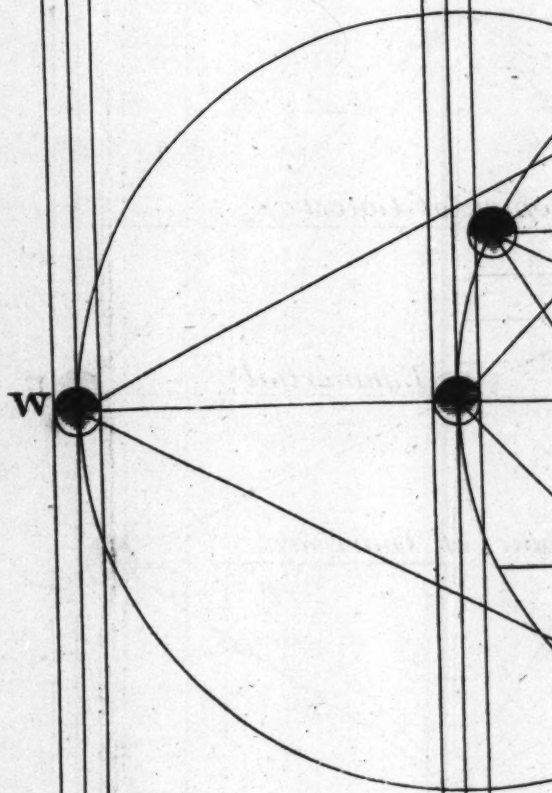
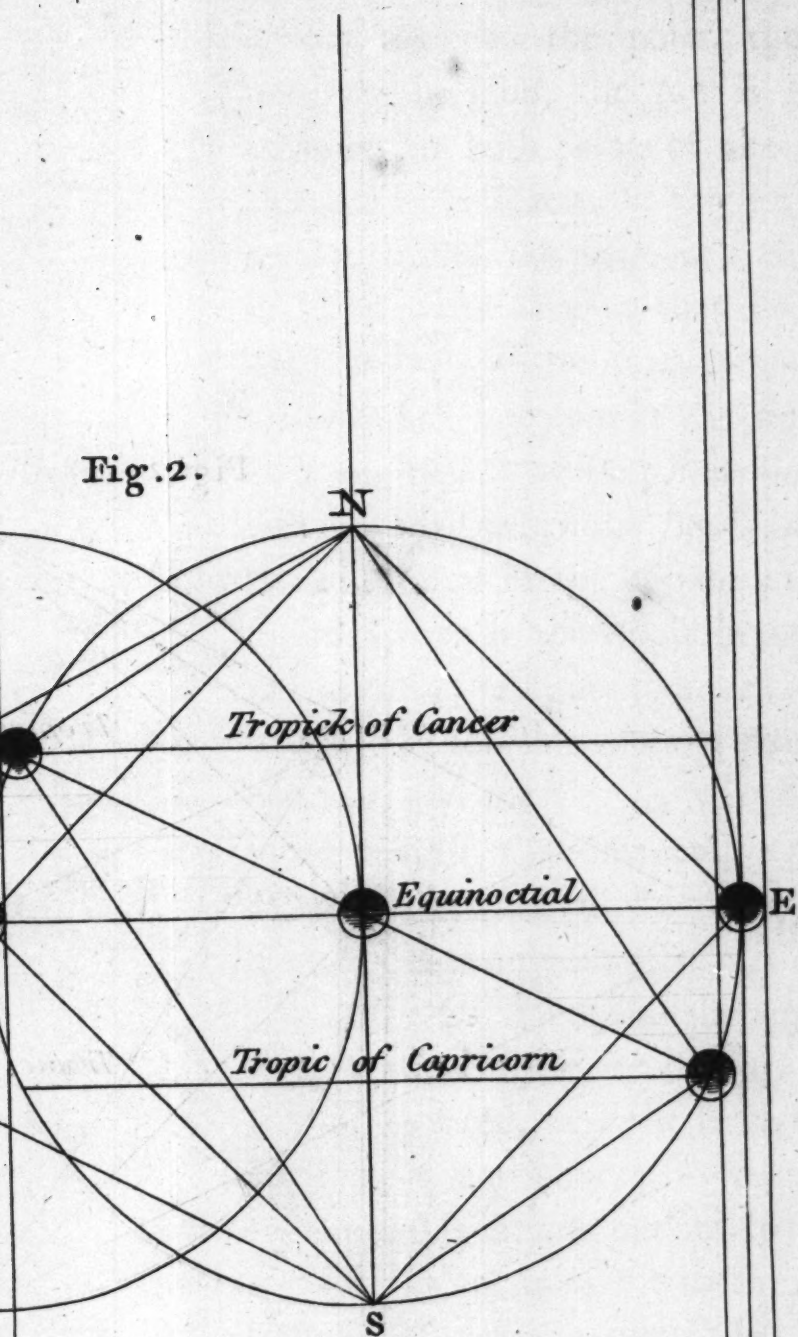


Fig. 2.



angle are unequal. For a more clear explanation see figure the second, where the earth is fixed between the poles, the circle represents the horizon, the sun is shewn in the equinox, in both points of the heavens, and likewise in both tropics, the sun is supposed to revolve round the earth in a circle, whose dimension is the same as that described for the horizon, and whose plan is according to the ecliptic that is shewn in the figure, and may be conceived to be perpendicular to the horizon; so that, when the sun is in the equinox, he will appear in the horizon as shewn in the figure; when in the tropic it appears the same as shewn in the figure to a person on the equator, and in the intermediate part between the equinox, and the tropic; wherever the sun is in the ecliptic, that distance the sun is from the equinox, the same will he appear in the horizon. This figure plainly shews that the apparent motion of the sun is not only the apparent, but the real, motion of the sun. Now to suppose the sun to be fixed, and the earth to move round the sun, is not only to invert nature, or turn things upside down, but inside out, forasmuch as the sun encircles the earth in his revolutions, and not the earth the sun. To suppose

pose the earth to move round the sun, we must take the distance of the sun from the earth for a radius to describe the orbit of the earth; but where is the sun to be fixed for the centre, so that the whole of the revolution, the poles in the heavens, shall have always the same elevation, and the sun to be at right angles with the poles at all times? If the sun be supposed to be fixed between the poles, then the earth must be where I have marked the sun to be, and the sun where I have supposed the earth; if so, in what manner are we to frame our conceptions, so that the sun (which is, according to this supposition, in a direct line between the poles) may appear at right angles with the poles at all times: how is this to be reconciled to reason? The immense greater distance of the poles from the earth, than the sun is supposed to be, nor the parallelism of the earth's axis, in her supposed revolution, will not reconcile this contrariety in nature; because it is evident to clear demonstration that the poles in the heavens, or these invisible points to which the eye is directed to from the different parts of the earth, in a proper elevation, and looking direct north or south, according to which pole we are observing;

serving; I say it is evident that these points in the heavens cannot be seen from the earth in one part of the earth's diurnal motion, though it may be in other parts, that is on the supposition of the earth's annual revolution, and the parallelism of its axis. To demonstrate this, see figure the second, where the earth is represented in her supposed orbit, with her axis parallel to an imaginary line passing from pole to pole. Now if we suppose the axis of the earth always parallel in the whole of the revolution, the axis of course must form an ellipsis, though the orbit be an exact circle; and that because of the obliquity of the plane of the orbit, which is according to the ecliptic. As the earth is supposed to move round this orbit, it must be granted that one meridian of the earth or another is always directed to the centre of the orbit, or the imaginary line from pole to pole; of course the opposite meridians must be direct the contrary way; therefore two persons on the same parallel of latitude, but opposite meridian, when these two men are viewing the invisible point in the heavens their eyes or sight intersect at that point. Now forasmuch as the axis of the earth is always parallel to the imaginary line from pole to pole, that
point

point of interfection to which the observers are directed to, will be at the same distance from the poles as the earth is from the centre of her orbit: and, with respect to the consideration of the immense distance the poles are supposed to be from the earth, so far as that the orbit of the earth subtends no more than a point, I will grant that the observer who faces the line from pole to pole, or the centre of the orbit, may see the invisible point in the heavens; but the observer, whose back is towards the centre of the orbit, cannot see the same point in the heavens, no not if the poles are supposed to be so far from earth that her orbit would subtend but half a point; because the further his sight is carried beyond the point of interfection, so much the further from the object; but some may object and say,—“ Can-
 “ not I move my eye, and see the point where
 “ the pole is?” I answer, No: a man cannot behold an object and look from it at the same instant; and, when a person beholds an object in the heavens, there is a disk around that object that is within the compass of the sight, therefore the object looked at is always the centre of that compass; for which reason the earth in her supposed orbit revolves round it.

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The one half of the globe of the earth must be within the orbit, the other half without; then that observer of the orbit on the outside, if his eye be directed to the opposite meridian where the other observer is, looks directly into the orbit; and the examiner, if he look to the opposite observer, sees directly out of the orbit; but if they elevate their sight to the exact elevation of the pole, their sight will intersect at one point; and round this point each observer will behold a like compass of the heaven surround this point, and then it will not be exactly alike in the same part of the heavens, but in a measure opposite; therefore that person on the inside of the orbit, when endeavouring to view the pole from the earth, could not see the pole in the heavens, were the earth to move in the supposed orbit: This I presume is so clear, that no man under the influence of reason, however great and learned, can deny.

I shall now endeavour to prove that the third supposed motion of the earth, viz. the poles of the world, revolve round the poles of the ecliptic, which is supposed to account for the apparent motion of the equinoctial points, is groundless; neither can I conceive it to be consistent with truth: for if the earth's axis
 departs

departs from its parallelism, and its equator
 move with its axis, and the ecliptic remain
 invariable, then of course the angle of the
 ecliptic from the equator must continually
 vary; and though it be but slowly, it will,
 though in a slow degree, alter the sun's de-
 clination. Neither can I conceive how the
 poles of the world are to revolve round the
 poles of the ecliptic without confusion. For
 if it be supposed that in the beginning both
 poles of the earth pointed to the poles in the
 heavens, and then began to revolve round the
 poles of the ecliptic, then, though the motion
 be slow, the angle of the earth's axis from
 the poles in the heavens would increase; for
 if one pole of the earth set off towards the
 east, the other must set off towards the west;
 and when the poles of the earth had gone
 half their revolution, then one would be east
 and the other west. Now if the ecliptic pole
 be the centre of the tract which the poles of
 the earth point out, then would the axis of
 the earth form an angle from the poles of
 the heavens of 47° . But if in their revolution
 they only point at the ecliptic poles, and take
 them in the tract as they point out, then the
 angle could not be less than $23^{\circ} 30'$; this
 would

would make the angle of the ecliptic from the equator 47° , or reduce it to nothing, forasmuch as the ecliptic is invariable; but if it be supposed that the poles of the earth, in their revolution round those of the ecliptic, from the beginning were always opposite each other in their revolutions, and the ecliptic poles the centre of the tract they point out, then would the axis of the earth be always at an angle of 47° , from an imaginary line from pole to pole in the heavens;—each of these suppositions appear contrary to nature. I think the real cause of the apparent motion of the equinoctial points evidently appears to proceed from the sun's annual revolution and the earth's diurnal motion round her axis, and is simply thus: I suppose, as before, that the sun moves round the earth in his orbit, at the rate of $59' 8''$ in the space of 24 hours; just so many minutes and seconds does the earth move more than once round her axis in 24 hours: but as the earth's motion is from west to east directly, and the sun's but obliquely, so, therefore, though the sun comes to the same point in the heavens exactly every revolution, he, on account of his oblique motion to the earth, gains on that of the earth something

thing every revolution, but in process of time will appear; for, though the sun comes to the same point in the equinox, exactly the same time every revolution, the same star will not appear in the horizon at the same instant of time as it did some years before, because the earth does not keep pace exactly with the sun in her rotations.

Now, as the equinoctial points have apparently moved since the time of Hipparchus 30° , and as he lived some time before the Christian æra, I suppose the difference of time between his observation, and those which were made when the difference of the equinoctial points was discovered to be 30° , near 1800 years; if so, then as 30° are 1800', the sun comes to the same point in the equinox one minute in the year before the same meridian of the earth in her rotation arrives to the same star it was under the year before.—This, I think, is so clear, that, after a careful investigation, it cannot be denied by any person of learning, candour, and probity.

I have made several attempts to communicate my thoughts to men of science, hoping to meet with their concurrence, after a due examination of the facts herein contained, but all
without

without effect: therefore, being confident of the truth of my hypothesis, and also believing that no man is able, on just and reasonable grounds, to refute it, I take this method of publishing them, convinced that, from being exposed to the world, they may fall into the hands of some dispassionate readers, who will vouchsafe to contemplate and weigh my arguments; and if they find them agreeable to truth, will not despise them on account of the meanness of the publisher; nor be ashamed to become my advocates, because error hath so long prevailed, and does still prevail. From these considerations, I hope some of the learned will investigate my hypothesis, and from thence determine whether the time of the conjunctions, oppositions, &c. do or do not answer exactly the same as in the Copernican system. If they should prove the same, I think it will be a sufficient evidence that it is founded on truth, because so many contrarieties are removed, and harmony runs through the whole.

I am persuaded that my hypothesis, though it should prove to be according to truth upon the clearest evidence, will, notwithstanding all that can be said in its support, meet with great opposition. The different dispositions of men will cause them to oppose it from dif-

ferent motives; some will condemn it on account of the ability of its author, others from mere envy; and many who may see the truth of it, if they could by any means claim it as their own, would vehemently contend for it; if they could not claim it as their own by any means, they would oppose it. Of this last sort I have reason to think there may be many, having met with such treatment in another matter of a public nature, wherein I trusted to the honour of the party, being no ways suspicious of any one's taking the hint that I gave, and appropriating it to their own use. Had I been aware of such treatment, and so secured it to myself that no one could have deprived me of it, I am fully persuaded it would have met such opposition, that it would not have been put into execution; however, it was and is a secret satisfaction that I was in any wise useful, though I lost the honour that was my due, and some pounds, in endeavouring to recover it.—Such was my reward!

I shall now endeavour to prove the truth of my hypothesis, by answering the reasons and demonstrative proofs given in Middleton's Dictionary of Arts and Sciences to prove the solar system to be the only true system.

1st Reason.

1st Reason. It is most simple and agreeable to the tenor of Nature in all her actions: for by the two motions of the earth all the phenomena of the heavens are resolved, which by other hypotheses are inexplicable, without a great number of other motions contrary to philosophical reasonings.

I answer, It is more simple and more agreeable to the tenor of Nature, in all her actions, to suppose that the sun moves round the earth, according to my hypothesis; because every obstacle is removed, and the whole phenomena of the heavens resolved agreeable to truth, with not so many motions by one, and exactly consonant with right reason.

2d Reason. It is more rational to suppose that the earth moves round the sun than that the huge bodies of the planets, and the stupendous body of the sun, and the immense firmament of stars, should move round the inconsiderable bodies of the earth every twenty-four hours.

To this I answer, That, notwithstanding the hugeness of the planets, and the stupendous body of the sun, it evidently appears, that the planets do move round the sun, while the sun is moving round the inconsiderable

body of the earth; therefore the exterior and interior planets do move round the earth as they are moving round the sun; and, agreeable to common understanding, as to the immense firmament of stars my hypothesis is not concerned.

3d Reason. But that harmony, which upon this supposition runs through the whole solar system, wonderfully confirms this hypothesis, viz. that the motions of all the planets, both primary and secondary, are governed and regulated by one and the same law; which is, that the squares of the periodical times of the primary planets are to each other as the cubes of their distances from the sun; and likewise the squares of the periodical times of the secondaries of any primary are to each other as the cubes of their distance from that primary. Now the moon which, in the Copernican system, is a secondary of the earth, in other hypotheses is a primary one, and so the rule cannot take place, because the periodical time, considered as of a primary one, does not agree therewith.

To this reason I answer, That the harmony that runs through my supposition appears much more perfect, and without confusion, which cannot

not be proved to be so in the Copernican system, though it be so frequently affirmed: and, however the Ptolemaic system, or any other that hath appeared in the world, is proved to be absurd, this doth not prove the Copernican system to be exactly according to truth: for, though the Copernican system come so near the truth as to discover the true motion of all the heavenly bodies except one, and that the principal one, and mistaking it, and supposing the earth to move in his room; now, though to appearance it is true, because of the exact calculation of the eclipses, &c. yet, if every obstacle be not removed, there remains a doubt; and that every obstacle is not removed appears beyond contradiction. Now if the supposition of the earth's motion round the sun answer the same as to suppose the sun to move round the earth, with respect to the conjunctions, &c. of the planets, one must be erroneous; and that the earth's motion is so, I shall make use of this same author's argument which he used to prove the Copernican system to be the true system, where, speaking of the word system, he goes on thus: It is sufficient to say that we are assured things may (nay must) appear to be in many cases

what they really are not; to have such affections and properties as are absolutely contrary to what they really possess. Thus a person, sitting in the cabin of a ship under sail, will, by looking out of the cabin window, see the apparent motion of the houses and the trees, &c. on the strand the contrary way.—This argument is just suitable for me to return; just so it was with Pythagoras, and the rest of the great and learned among the ancients; they had got on board the ship Speculation; and she being moored in the sun, as they were in motion with him, they looked out at the cabin-window and beheld the earth in apparent motion, which they thought was real, and to be moving round the sun; had they come upon deck they would have been able to look round them; then probably they might have discovered the elevation of the poles; but being in the sun, and thinking the poles at such an amazing distance, they might think it too trifling for their notice, and so leaped over it.—But as all the works of the great Creator of the universe are perfect, we should so consider them. Thus the ancients, having discovered the Ptolemaic system to be absurd, founded another not free from absurdity, though

though it hath been confirmed by the concurrence of the learned of all ages, since they have all sat in the same cabin, and looked out at the same window. As to the one and the same law, that governs and regulates the motions of the planets, I must confess that I do not understand it, neither do I believe any mortal ever did, or ever will, while in this mortal state; and it appears plain to me, that the author of these reasons was not acquainted perfectly with the laws of nature, forasmuch as the sun does move round the earth as well as the moon, and still the moon is a secondary of the earth.

4th Reason. Again, this simple consideration Mr. Whiston thinks enough to establish the motion of the earth for ever, viz. if the earth do not move round the sun, the sun with the moon must move round the earth. Now the distance of the sun to that of the moon being as 10,000 to 46, and the moon's period being less than 28 days, the sun's period would be found no less than 242 years, whereas in fact it is but one year.

To which I answer, Mr. Whiston framed this reason from the beforementioned laws, with an endeavour to establish the earth's mo-

tion; but I think it will appear, from due consideration, that Mr. Whiston has overfet or broken the notion that men had of the laws that regulated the motions of the planets, &c. rather than established them; for I think, according to plain reason, it will appear that the earth is at the same distance from the sun as the sun is from the earth: therefore, if the earth move round the sun, the sun is the centre of the earth's orbit; but if the sun move round the earth, then the earth is the centre of the sun's orbit—the distance being the same, the orbit will be the same; so that the moon being called a primary, or a secondary, has nothing to do with the real motions; for if the sun's period would require 242 years, so would the earth require the same, the proportional distance being equal: therefore, if in fact the earth be thought to move round the sun in one year, so I think it is clear that the sun moves round the earth in one year. This and the foregoing reason have no weight in the balance of truth: and I judge, on fair consideration, this oversight of Mr. Whiston turns out more for my hypothesis than against it.

5th Reason.

5th Reason. The sun is the fountain of light and heat, which irradiates through all the system, and, therefore, it ought to be placed in the centre, so that the planets may at all times have it in an uniform and equal manner.

I answer, That, according to my hypothesis, the sun is the centre of the planets' orbits, and always at the same distance from the earth, so that the planets, and earth also, have the same benefit from the sun as shewn in the Copernican system.

6th Reason. For if the earth be in the centre, and the sun and planets revolve round it, the planets would then, like the comets, be scorched with heat when nearest the sun and frozen with cold in their aphelia or greatest distance, which is not to be supposed.

I answer, In my hypothesis, the earth, being the centre of the sun's orbit, and the sun the centre of the planets' orbits, secures the planets from these inconveniences.

7th Reason. If the sun be placed in the centre of the system, we then have the rational hypothesis of the planets being all moved about the sun, by the universal law or power of gravity arising from his vast body, and every thing

thing will answer to the laws of circular motion and central force; but otherwise we are wholly in the dark, and know nothing of the laws and operations of Nature.

I answer, My hypothesis is more rational, because freed from all incumbrance. As to the universal law or power of gravity and central forces, as it may respect the motions of the planets round the sun, I have nothing to say against it, as it is above my conception; but that the earth is governed by such laws, would be saying more than can be proved; for, as no man can say what matter the heavenly bodies are composed of, it appears to me to be beyond the reach of mortals to attain to the knowledge of the law that governs them. If I might be allowed the use of the word spiritual, to convey my ideas, (for I know not how else) and ask the question if the heavenly bodies be of a spiritual nature, whether the sun, notwithstanding his stupendous bulk, may not be less ponderous than the earth, as being of a different nature, seeing that the all-wise Creator hath made the sun to be the life of the whole creation; that the pure light or fire that proceeds from it fills the whole created space, which, though infinite, nothing
is

is hid from the heat, and that it penetrates even to the centre of the earth; therefore, as by experiment it is proved that lead, tin, or regulus of antimony, being exposed to the fire of a burning glass, though they lose much in smoke and steam, are nevertheless found to be considerably increased in weight; from which it appears, that the light which proceeds from the sun comes on the earth with great force; and if the earth was moving round the sun this force would continually remove the earth further from him. But in answer to this it may be said, this may be the centrifugal force; but then where is the law or power of gravity that arises from his vast body? To talk of centripetal force without any proof, appears to be nothing more than the force of imagination; and imaginary force is of no force at all;—therefore it appears to me that it is too great a presumption for sinful mortals to attempt to discover how the Almighty made all things, or by what laws he governs the heavenly bodies. For as to the laws of motion, and the other laws of nature, I think the greatest of men, if they set out on this discovery with ever so much intenseness, will find themselves far short of the truth, even before they begin to ascend

ascend to the heavens.—If they proceed regularly, (and for men in pursuit after knowledge thus to proceed, is first to begin with themselves and to study their own formation and the laws concerning it) they will in the first place consider whether they can conceive properly the law of generation, in what manner they were formed in the womb, and how the soul is joined to the body while in that state, and how every part increases; and when born, and grown to maturity, by what law they live and move. I believe, after all the inquiry men are able to make into these laws, the only just conclusion that can be made will be this: that it is “in God we live, and move, and “have our being.” There are many things on the terraqueous globe respecting the laws of Nature, both as to motion and the formation of the several productions of the earth and sea, that elude the search of the most diligent.

If the greatest of men are strangers, and can give no reasons, so as to account for the laws of Nature concerning themselves, can it reasonably be supposed they can account for the formation of the earth or heavenly bodies, or the cause of the respective motions?—It is an inestimable blessing that the all-wise Creator
has

has given sufficient wisdom unto men to enable them to understand the operation of Nature, so as to prove useful to mankind in general; but as to the laws of Nature, they are a secret that belong unto God. I cannot but make the same conclusion with this author, when he says, that if it be otherwise than what he asserts, we are wholly in the dark, and know nothing of the laws and operations of Nature. As to the laws of Nature, I believe all men have been, and now are, wholly in the dark; but as to the operations of Nature, they have great but not perfect light; for I believe many things will be discovered that now lie hid.

8th Reason. But happily we are able to give not only reasons, but demonstrative proofs, that the sun does possess the centre of the system, and that the planets move about it at the distance and in the order assigned in this and other places.

The first is that Mercury and Venus are ever observed to have two conjunctions with the sun, but no opposition, which could not happen unless their orbits lay within the orbit of the earth.

This reason my hypothesis denies; but with the demonstrative proof it agrees, only by leaving out the words orbit of the earth.

9th Reason,

9th Reason, and second Proof is, That Mars, Jupiter, and Saturn, have each their conjunction and opposition to the sun alternately and successively, which could not be, unless their orbits were exterior to the orbit of the earth.

With this Reason and Proof my hypothesis agrees also, with only leaving out the words orbit of the earth.

10th Reason and third Proof. The greatest elongation or distance of Mercury from the sun is 20° , and that of Venus 47° , which answers exactly to the distance in this system; though in the Ptolemaic system they might and would sometimes be seen 180° from the sun, viz. in opposition to him.

Between this Reason and Proof there is not the least disagreement with my hypothesis.

11th Reason and fourth Proof is, In this disposition of the planets they will all of them be sometimes much nearer to the earth than at other times; the consequence of which is, that their brightness and splendour, and also their apparent diameters, will be proportionably greater at one time than another; and this we observe to be true every day. Thus the apparent diameter of Venus is near $66''$ when greatest, but when least not more than $9''$ and a half;

a half; of Mars when greatest it is $21''$, but when least no more than $2''$ and a half; whereas, by the Ptolemaic hypothesis, they ought to be always equal.

To this Reason, and Proof my hypothesis exactly agrees.

12th Reason and fifth Proof is, That when the planets are viewed with a good telescope they appear with different phases, or with different parts of their bodies enlightened. Thus Venus is sometimes new, then horned, and afterwards dichotomized; then gibbous; afterwards full; and so increases and decreases in the same manner as the moon, and as the Copernican system requires.

I answer, That my hypothesis requires exactly the same in every respect as the Copernican does, with regard to the different phases, &c. &c.

13th Reason and sixth Proof is, That the planets all of them do appear direct in motion, sometimes retrograde, and at other times stationary. Thus Venus, as she passes from her greatest elongation westward to her greatest elongation eastward, will appear direct in motion, but retrograde as she passes from the latter to the former; and when she is in those

those points of greatest distance from the sun she seems for some time stationary; all which is necessary upon the Copernican hypothesis, but cannot happen in any other.

I answer, That all these motions of the planets and appearances my hypothesis agrees to; and not only the planets' retrograde and direct motions, but likewise those of the sun and earth; though not apparent to the eye yet clear to the understanding. My hypothesis supposes the sun to move in his orbit from west to east, and from east to west, as to the west and east points of the heavens; and, to an eye placed in the ecliptic pole, it would appear so, though never would appear stationary; so to a person on the equator beholding the sun in the horizon when the sun is in the equinox, if he look east, his antipode beholds the sun at the same instant while he is looking west; so likewise as to the earth in her diurnal motion, suppose the meridian of London, according to appearance as to its motion we are looking east to see the stars rise, but when the meridian comes under the east point of the heavens, from that instant we are going west, as to the heavens; therefore all have their constant motions round their orbits, and the earth round her axis,

axis, and sometimes in direct, and sometimes in retrograde, motions; and to an eye square from the plane of the orbit there would be no stationary appearance, it being the obliquity of the plane of the orbit to us that the stationary appearance of the planet seems to be. As to the planets being at a greater distance from the sun at one time than another, my hypothesis knows nothing of it; and as to the different motions of the planets being necessary upon the Copernican hypothesis, but cannot happen to any other, I will venture to say the assertion of the author upon that subject was premature.

14th Reason and seventh Proof is, That the bodies of Mercury and Venus, in their lower conjunctions with the sun, are hid behind the sun's body, and in the upper conjunctions are seen to pass over the sun's body, or disk, in form of a black round spot, which is necessary in the Copernican system, but impossible in the Ptolemaic.

I answer, Though it be impossible in the Ptolemaic system it is necessary in mine.

15th Reason and eighth Proof is, That the times, in which these conjunctions, oppositions, stations, and retrogradations, of the planets hap-
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pen, are not such as they would be were the earth at rest in its orbit ; but precisely such as would happen were the earth to move, and all the planets in the periods assigned them ; and therefore this, and no other, can be the true system of the world.

To this fifteenth Reason, and last Proof and positive assertion, I answer, That, though the times in which these conjunctions, &c. are not such as would happen were the earth at rest in her orbit, yet they will happen, and that precisely, if the centre of gravity be at rest exactly between the poles, and the earth revolves round it as its centre, and the sun likewise performs his annual revolution in an orbit that has this same centre, and the planets revolve round the sun in their orbits, having the sun for the centre ; and though I will not be so bold and positive as to say my system is exactly true, without any mixture of error, I will venture to affirm, that it comes nearer the truth than any other that has yet appeared ; and that it is the true system of the world, I believe no man living is able justly to deny.

16th and last Reason. But the truth of this system has been abundantly confirmed by the accurate observations of the learned Doctor
Bradley;

Bradley; for it plainly appears from thence, that the fixed stars have an apparent motion or aberration, and seem to describe small circles or ellipses, which could never happen were the earth fixed in the centre, but naturally follows from the motion of the earth's bearing some proportion to the velocity of light, and consequently the earth really revolves round the sun.

In answer to this last Reason, I must confess that I have not the credulity to receive the doctrine of aberration as an article of my creed. The opinion which has been received and confirmed by the accurate observations of the learned Doctor appears to me to be founded on conjecture only, therefore no way fit to found an argument to establish the earth's annual motion upon; and, if the whole process of the Doctor's accurate observations be fairly examined, I think it will appear to amount to a sufficient proof that the earth is fixed as to annual motion; for, according to the account given of the observations, it is said that, in the year 1725, when Mr. Mollyneux and Doctor Bradley began to observe the bright star in the head of Draco as it passed near the zenith, in order to discover the parallax of the earth's annual orbit, they,

after repeated observations, found this star, about the beginning of March 1726, to be 20" more southerly than at the time of their first observation. It now seemed to have arrived at its utmost limit southward, because, in several trials made about this time, no sensible difference was observed in its situation: by the middle of April it appeared to be returning back again toward the north; and about the beginning of June it passed at the same distance from the zenith as it had done in December, when it was first observed: in September following it appeared 39" more northerly than it was in March, just the contrary way to what it ought to appear by the annual parallax of the stars.

From which observations I think it will appear, after due inquiry into them, that they all were contrary to what they ought to be, according to the supposed annual parallax of the stars; for, by the diurnal motion of the earth, no difference can be made as to their apparent motion east or west; the only apparent different appearance would be from north to south; therefore, when the sun is in the equinox, the earth also, in her supposed orbit, must be supposed to be in the equinox, so that,
 whether

whether the earth be in the east or west part of her orbit, the appearance of the star would be the same if the observations were exact, and the greatest difference would appear when the sun is in his greatest declination from north to south. But, according to the account given of these observations, the appearances were reverse; for we are told that, by the middle of April, it appeared to return back again, and that about the beginning of June it passed at the same distance from the zenith as it had done in December, when it was first observed; which, returning back again, I think implies that the same distance from the zenith was the same apparent place in the heavens.

We are further told, that this unexpected phenomenon perplexed the observers very much, and that Mr. Molyneux died before the true cause was discovered (and, I think I may add, so did Doctor Bradley also). After this Doctor Bradley, with another instrument more exact and accurately adapted to this purpose, observed the same appearance not only in that but in many other stars: and by the great regularity that appeared in a series of observations, made in all parts of the year, the Doctor was fully satisfied with regard to the general laws

of the phenomenon, and therefore endeavoured to find out the cause of them: he was already convinced that the apparent motion of the stars was not owing to a mutation of the earth's axis. (That mention should be made of the mutation of the earth's axis on such an occasion, by men that think the earth's orbit to subtend but little more than a point from the distant stars, appears very strange). The next thing that offered itself was an alteration in the direction of the plumb-line, with which the instrument was constantly rectified; but this, upon trial, proved insufficient: then he had recourse to what refraction might do; but here also nothing satisfactory occurred: at length, through a most amazing sagacity, this acute astronomer conjectured that the phenomenon hitherto mentioned proceeded from the progressive motion of light, and the earth's annual motion in its orbit; for he perceived that, if light were propagated in time, the apparent place of an object would not be the same when the eye is at rest as when it is moving in any other direction than that of the line passing through the eye and the object; and that, when the eye is moving in different directions, the apparent place of the object would be different.

From all which observations, and experiments to find out the phenomenon that so perplexed the Doctor, and his amazing conjecture, it will appear, after a fair trial, that the definitive conclusion is without support from reason; for it is evident, from the tenor of the relation given, that the phenomenon which he wanted to find the cause of was the irregular apparent motions of the stars; for, had these motions appeared regular before Mr. Molyneux died, he would have been satisfied, as he made his observation on this principle, that the earth did move in her orbit, and therefore expected to observe the object from different points of view, in order to find the annual parallax. Then why all this bustle about the amazing sagacity, &c. to prove what they all knew before, if the earth did move in an orbit, as they all believed it did? What has the propagation of light, whether in time or instantaneously, seeing it is propagated before the observation can be made, to do in this matter? The whole of this last amazing discovery appears to be nothing more nor less than the instigation of the author of all deceit, to keep men from beholding the truth; and, though it be strange, yet it really is as

true, that we eagerly hold fast any thing, that has the least appearance of an argument, to support any error we may have once embraced. Now, if it be supposed that the stars are at such amazing distances, that the orbit of the earth, which is twice the distance of the sun from it, subtends no more than a discernible angle, can it be supposed, with any degree of truth, that it is in the power of man to fix an instrument, by plumb-line, or any other method, twice alike, seeing there is no proportion between the length of the instrument and the distance of the stars? Therefore the least imperceptible deviation from exactness will render the observations uncertain; and this alone appears to be the cause of the perplexity that attended the observations. I am confident that, if an instrument was so fixed as to behold any one of the fixed stars near the zenith, or not, when it is exactly in the meridian, and the instrument to remain undisturbed the whole year or for ever, the star would always appear the same; if so, then there can be no annual parallax, neither does the earth move in an orbit.

I find, in Middleton's Dictionary, under the word star, that Mr. Whiston, in his Astronomical

mical Lectures (lect. iv.) from the observations of Doctor Hook and Mr. Flamsteed, computes, that the greatest annual parallax, or that which a star in the pole of the ecliptic would have, is 47"; from whence he finds the distance of the stars to be about 9000 semi-diameters of the earth's orbit; but that Doctor Bradley, by a series of accurate observations, has discovered that the parallax does not amount to two seconds, therefore the distances of the stars will be twenty times greater than the foregoing calculation. Now, from these different observations, and allowing Doctor Bradley's to be most accurate of the two, it may reasonably be concluded, that if he had been exactly so there would have been no parallax; then, consequently, the earth could not move annually in an orbit. Neither is there any reason to believe that any of the stars are at such immensely greater distances from the earth than the sun is; nor that the stars are suns to other systems, but that they all receive their light from the sun; therefore I think, from the clearest reason, it appears that the Doctor's observation, &c. is not of the least force imaginable to effect the stability of the earth, but that it is immoveable as to annual motion, and will remain so.

I SHALL

I SHALL now endeavour to shew that the whole heavens and the earth are emblematical, and represent the incomprehensible JEHOVAH—Father, Son, and Holy Spirit,—shining forth in all the glory of sovereign grace; on his church, in this world, in the person of Jesus Christ, who is very God and very man, and that Sun of Righteousness who arises and shines on his church with healing beams of grace, to which the natural sun is a most glorious emblem; the invisible poles, between which the earth is supported and enabled to move round in its diurnal motion, to meet and enjoy the enlightening and fructifying influences of that luminary, represent to the eye of the mind the invisible Godhead, the Father and the Holy Spirit. The planets, fixed stars, and
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comets, are all emblems of what I may hereafter turn my thoughts to. The whole earth is an emblem of the race of mankind, from Adam to the last of his degenerate offspring, from whom, the great Creator forms a-new his church in Christ Jesus. Now, in order to shew the exactness of the similitude, I observe that the natural sun sheds abroad his benign influences on the whole earth, but it is not alike benefited, nor produces fruit alike; some parts of the earth are barren deserts, others are wildernesses, habitations of wild beasts; some parts mountains, others vales, but few in comparison to the rest that are cultivated and productive, such as pleasant gardens and fruitful fields, vineyards, orchards, and the like. As in the natural sun all life and light to the whole creation, both animate and inanimate, are treasured up; the sun is the fountain from which all natural blessings flow. The operative power of the sun causes the clouds to be filled with water, to be carried about in the heavens, and to descend on the earth to replenish and make it fruitful; fire and hail, snow and vapours, stormy winds, &c. all proceed from the agency of the natural sun, but always under the control of the Sun of Righteousness,

ousness. Now, as the earth is nourished and made fruitful by the sun, yet there is a duty incumbent on man, who is made lord of this world, and for whom it was created, to cultivate, by his labour and diligence, the ground, from which all his temporal wants are supplied; man is to be found in the use of such means as are co-operative with the influences of the sun, because, after the earth was cursed on account of man's sin, the blessing, as to temporals, is thus, "In the sweat of thy face thou shalt eat bread;" therefore the earth is to be cultivated by man, else it will produce naturally briers, thistles, and thorns, and other noxious weeds; from whence we may observe, that, in those countries where the inhabitants do not cultivate the ground, there it brings forth its natural productions, the consequences of the curse, notwithstanding the benign influences of the sun. Now, where the minds of men are willingly employed in the use of the means, with a full dependance on the blessings of God, and his providence assisting them in the performance; though in the sweat of their face they eat their daily bread, yet are they indued with a calm resignation, to sweeten all the labours and crosses they meet with.

with. There are many among the children of men who are diligent in the cultivation of their ground, or other avocations, be they what they may, and who look not to God for his blessing on their labours, but think all their prosperity springs from their own industry; such, if in misfortune, or any calamities overtake them, not having made God their trust, but trusting to their own endeavours, are often driven to despair, and as frequently come to a miserable end, and all because they did not make God their trust; for, though man be commanded to be found in the use of the means, he is not to expect a blessing from them for any thing that he has done or can do; but as it is the appointed way which God hath promised to meet his creature man and bless him. As it is with respect to man, and the fruits of the earth whereby he is to subsist while in this life, that if he be not found in the use of the means, there is no blessing attends him, so it is in spiritual things with regard to the souls of men. Does the earth represent all mankind, from Adam to the last of his race; and does the natural sun represent Jesus Christ, the God-man, the Sun of Righteousness, shining in his strength, and shedding abroad his
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benign influences over the whole world of mankind; then wherefore is it that the greater part of mankind receives no benefit from such influences? Is it because Christ did not die for them? It does not appear, from the tenor of God's revealed word, that this is the case, but rather from their revolting from God, and disregarding his commands. All Nature declares the eternal Godhead, and his attributes, and invites all men to worship the only living and true God; therefore it is that the apostle, Rom. i. 18, &c. says,—“ For the
 “ wrath of God is revealed from heaven against
 “ all ungodliness and unrighteousness of men,
 “ who hold the truth in unrighteousness. Be-
 “ cause that which may be known of God is
 “ manifest in them: for God hath shewed it
 “ unto them. For the invisible things of him
 “ from the creation of the world are clearly
 “ seen, being understood by the things that are
 “ made, even his eternal power and God-
 “ head; so that they are without excuse. Be-
 “ cause that, when they knew God, they glo-
 “ rified him not as God, neither were thank-
 “ ful; but became vain in their imagina-
 “ tions, and their foolish heart was darkened,”
 &c. Now it appears according to the simili-
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tude between the earth and mankind, that every man who arrives to the use of reason, has his allotment to cultivate; that is, the faculties of the mind: as these are managed, so will the production be; if there be a willing mind to attend to the voice of God in the book of Nature and Providence, where the book of revelation has not appeared, God has so revealed himself to them, that they have walked before him in true faith; witness Job, his friends, and Elihu: I believe they were all good men, though they had not the book of revelation to assist them; but where men have the scriptures for their guide and meditate upon them, there they behold the glory of the Divine perfections, and the rich display of sovereign grace, manifested towards sinful man in the person of Jesus Christ; therefore, whether we have the scriptures or not, there is no excuse for our not improving the talent committed to our care to the glory of God. Now, though the heavens are not so intelligible as to declare the doctrine of the Trinity, nevertheless, where the light of revelation comes, in the scriptures of the Old and New Testaments, there is a discovery of the meaning of the language which the book of Nature speaks,

speaks, Psalm xix. v. 1—6; “ The heavens
 “ declare the glory of God, and the firma-
 “ ment sheweth his handy work; day unto
 “ day uttereth speech, and night unto night
 “ sheweth knowledge: there is no speech nor
 “ language where their voice is not heard;”
 &c. Christ is the Alpha and Omega, the be-
 ginning and the end; which is, and which was,
 and which is to come, the Almighty. He is
 that God which the heavens declare the glory
 of, and of which the natural sun is so strik-
 ing a figure; for as all temporal blessings are
 treasured up in the natural sun, and made
 blessings and cursings to the children of men,
 according to the righteous judgment of the
 Son of God, the Sun of Righteousness, so is
 all spiritual blessing treasured up in Christ;
 and his heavenly influence pervades the whole
 creation of mankind, from the first to the last
 of the race, even as the heat of the natural sun
 pervades the whole earth to its centre. But why
 is the world of mankind so nearly represented
 by the earth in its different parts? I answer, be-
 cause the causes being similar the effects will be
 the same. The earth and the heavens also were
 made for man; and when he was formed out
 of the dust of the earth, and God had breathed
 into

into him the breath of life, and he became a living soul, there was a living body also: the soul and body being united, the one part being spiritual, the other temporal, each required different nourishment for their support; the spiritual required spiritual, the temporal temporal food; therefore the Lord God planted a garden and put man therein, that he might there enjoy the sweetest pleasure: while he was satisfying his soul with the abundant glory of God, which appeared wherever he cast his eyes, and that the tabernacle of clay in which the soul was lodged might be supported, there were abundant supplies from the fruits of the earth to satisfy every desire; but he, being thus in honour, continued not in rectitude, but, through the deceitfulness of the devil, sinned against God, and was cast out of this garden; God therefore, in the riches of his grace and covenant love, had provided a Saviour, and did not cast him utterly away, as the just reward of his sin, nor fully execute the sentence denounced against him for breaking his law, but granted him a reprieve; and, to the confusion of Satan, offered life and salvation to him, in the same words that were part of the serpent's curse, which was—the promised

Saviour—the seed of the woman that was to bruise the serpent's head. Now man being dead as to law, that is, under sentence of condemnation, the promise of life and salvation was made to Adam, and in him to all his race, who should believe in this promised Saviour; and, from a sense of their being in a state of condemnation for sin, and liable to fall into eternal misery as its just reward, those who endeavoured to flee from the wrath to come by willingly embracing this Saviour in the arms of faith, and, from a sense of the infinite love of God, gave up themselves, body and soul, unto God to be guided by his counsel, and protected by his power from the snares and assaults of Satan, their grand adversary, should be saved with an everlasting salvation; but such as disregarded this promised Saviour, and rejected the counsel of God against themselves, by listening to the suggestions of Satan, should perish in the way of their own choosing. Since life and death are clearly set before them, this being now a state of probation; and being cast out of Eden, and the ground cursed for their sakes, that is, for their sin, the earth in this cursed state will produce nothing that is pleasant and good for food without

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our labour and toil. Before sin entered the world the Lord God planted a garden for man, and he had nothing to do but to enjoy the fruits he was permitted to eat; but now man is to dig and plant, and to grub up the weeds, and labour to prevent the earth from bringing forth its natural produce, which is the effect of the curse. Yet how have the generations of mankind acted with respect to the command God enjoined them to keep? have they observed it so as to cultivate the earth, and rid it of those briers and thorns, and wild beasts and venomous creatures, so obnoxious to man? surely no; for, from the earliest accounts we have of mankind, they have, through the instigation of the devil, forsaken the commands and counsels of God, and have followed after rapine and murder. None being content with that which God in his providence had given them, and having forsaken him, he left them to follow the dictates of their own corrupted hearts and imaginations as a punishment; therefore, instead of clearing and cultivating the land, as they increased, they became enemies to one another, and, leaving the art of husbandry, strove to excel in the art of war; whereby wildernesses, &c.

increased, as the earth was depopulated of its inhabitants; for, if the inhabitants of the earth, that is, the children of men in general, had followed the dictates of the law of God written on their hearts, they would have been peaceable, have lived in harmony, and endeavoured to promote the welfare of each other, and not, from the perverted notion of honour, have become one another's destroyers. This has always been the case, more or less in all ages, and is the melancholy prospect in many places at this time, which is the reason so great a part of the earth is uncultivated.

Thus it is that the waste and wilderness lands, that should be for the support of the temporal welfare of mankind, are similar to the world of mankind with respect to their spiritual welfare. The soul of man being spiritual, requires continual supplies of food for its nourishment and growth, and if it be not fed with that which is spiritual it will decay and die; that is, become carnal, sensual, devilish. Now, though all mankind by nature are in a state of condemnation, they are not delivered up to the power of Satan, but are left to their own will to chuse life, by believing in the promises of God, and laying hold
of

of Jesus Christ by faith as their only hope for life and salvation, that they may be saved from the guilt of sin, and its power, while in this life, and from the power of eternal death, through the sacrifice and death of Jesus Christ, the Lamb slain from the foundation of the world. Thus infinite goodness is counselling mankind, by the wonders of his power and grace, to come and receive Christ as their Saviour, that they might live; on the other side Satan, with all his devices, is endeavouring to blind the minds of men, and to fill them with pride, and self-will, and unbelief, that they may reject the counsel of God, and become his willing captives.—I am aware that by many I shall be counted a legalist, and a propagator of erroneous doctrine; I acknowledge the Scriptures for my guide and rule, and therefore can call no man master in things that differ. I will only cite one passage of our blessed Lord in his discourse with the unbelieving Jews, John c. v. ver. 34. “But these things I say that you might be saved.”—According as men are prevailed on to receive good or bad counsel, so they act. There are a few, and but a few in comparison, who are made willing, and do believe the report

which God has given in the Scriptures concerning his Son Jesus Christ; those are by grace enabled to behold their miserable and helpless state by nature, therefore, from a sense of their own ignorance they go to God through Christ for wisdom; from a sense of their weakness they go to the strong for strength, that they may, through Christ's strengthening them, be enabled to overcome Satan, their grand enemy, who so opposes them in their way through this life; and, from a sense of their own insufficiency in every point, they give up themselves entirely to Christ, and take him as their all in all, and ever find their strength renewed, in proportion as they are enabled to feed their souls by meditation on the glory of the wisdom and power and grace of God, that shines forth on sinful, but penitent, returning sinners, from Christ the Sun of Righteousness. These few are represented by the little spots of the earth that are properly cultivated; on the other hand there are vast multitudes who are willing captives to Satan, having rejected the counsel of God against themselves, and turned from those sublime objects of wonder and astonishment that every where present themselves to the sinful and rebellious children

children of men, as proper food for the mind
 or soul to feed on, by contemplating on the
 Majesty of the Infinite JEHOVAH, the glory of
 whose Divine perfections is so manifestly dis-
 played in all his works, in nature, providence,
 and grace. In the beginning when God creat-
 ed the heavens and the earth, and man from
 the dust of the earth, and had breathed into
 him the breath of life, and he became a liv-
 ing soul, the Scriptures inform us, (and the
 information is consonant with reason) that " in
 " the beginning was the word, and the word
 " was with God, and the word was God; and
 " without him was not any thing made that was
 " made," John i. 1—3. and some following
 verses: and in Colossians i. 16. it is said " For
 " by him, that is, the Son of God, were all things
 " created that are in heaven and that are in
 " earth, visible and invisible; whether they be
 " thrones, or dominions, or principalities or
 " powers, all things were created by him and for
 " him."—Now as all things are created by him,
 and for him, does it not appear, that as the Eter-
 nal JEHOVAH in the everlasting covenant, ac-
 cording to the counsel of his own will, decreed
 to create man, and from him and his posterity to
 raise a church, and unite that church to himself,
 by making the second person in the undivided

Trinity to be the head of it, to redeem it from the miserable state into which it had been permitted to fall through the deceitfulness of Satan? I say, does it not appear, as all things were made by him, and for him, that he would make his church one with himself, and that he made all things, whether in the heavens above, or in the earth beneath, for the benefit and support of the souls and bodies of the world of mankind out of whom that church was to be formed? I think that reason will acknowledge this; and that therefore the infinite love of God to mankind was richly displayed beyond the conceptions of mortals, in that, before man was created, there was such provision made for his temporal and eternal welfare. After man had fallen by transgression into sin and misery, and a promise made of pardon and reconciliation to God in the seed of the woman to Adam, and in him and to all his race, that should put their trust in this promised Saviour, he and his wife, being the first transgressors, were made the first recipients of this grace, by believing the promise; they saw Christ's day and rejoiced; on this promise they lived, and found support against the assaults of Satan. As their family increased, and were capable to understand,

stand, there is no doubt but they taught their children to know that they were in a lost undone state by nature, and the manner how they became so; that it was on account of their sin that they had rendered themselves obnoxious to the wrath of the holy and righteous God of heaven and earth. But that God had provided and promised a Saviour; that whosoever of them put their trust in God, through this promised Saviour, and opposed all the assaults of the devil, in his various attacks, by faith looking continually to him for aid, should come off conquerors; but those that forgot God and their Saviour would, through the deceitfulness of Satan, (that same devil that deceived them, and caused them to believe his lies, and to sin against God) be led captives at his will, and so become enemies to God by wicked works; and thereby bring infinite miseries into this world, and make themselves eternally miserable in the world to come. And that there was no way to become happy in this world or the next, but by obeying the Almighty, and looking continually up to him for strength, that they might be able to resist the devil in his various and continued assaults. And then, no doubt, that they might

impress their minds with a due sense of the Majesty of the Most High God, whose creatures they were, and whose love and obedience he demanded, they shewed unto them the glory of his power, and goodness in, as it appears, the works of Creation and Providence. These truths were handed down from generation to generation by tradition, by the few that walked in the fear of God, until it pleased God to reveal his will to his chosen people by Moses and the prophets. The Scriptures declare Christ to be God, and likewise that the heavens declare his righteousness. Christ is emphatically called in these the Sun of Righteousness; and in Psalm lxxxix. v. 36. where the Psalmist is speaking of Christ as the seed of David, "that he should endure for ever, and "his throne as the sun before God;" and the prophet Jeremiah, c. xxxi. v. 35. says, when speaking of Christ, "Thus saith the Lord, "which giveth the sun for a light by day, and "the ordinances of the moon and of the stars "for light by night;" and many other Scriptures shew that the natural sun is an emblem of Christ, that the moon is an emblem of the moral law, the Christian's rule of life; and that the fixed stars are emblems of the
saints

saints in glory, who, whilst here on earth, shone as lights in a holy life and conversation. Those, when in the world, were careful for food for the soul, the inward man, not altogether careful for the clay tenements in which they dwelt, and therefore answered the end of their creation; but those who neglected to feed their souls on the rich provision which, in such abundance, was spread before them in the books of Nature, Providence, and Revelation, became as it were twice dead, being dead by nature, that is, being in a state of condemnation by the law, and being in a state of probation, refusing life, and in the error of their way, rejecting the counsel of God, and willingly following the counsel of Satan, they confirmed the sentence by aggravated crimes, some more than others, because they sinned against more light; therefore it is that our Lord said to those that saw his mighty works, and either maliciously or carelessly rejected him and his gospel, "That it would be more tolerable for Sodom and Gomorrah in the day of judgment than for such," &c.

Now, seeing that there is such abundance of food for the souls of men to feast on, how inexcusable

excusable will all such be, who refuse those dainties, and turn aside to the sensual delights of the fleshly mind, whereby the soul, being starved to death for want of sustenance, and being dead as to spirituals, becomes not only sensual, but devilish, therefore many degrees below the lowest of the brute creation; as to the exact proportion, how much lower man by sin is sunk below the brute, I will not say; it seems as difficult to explain, as it is for men to find the distance of the fixed stars from the earth. But as no description of mankind, as to natural abilities and gifts, whether mental or external, are forbidden to take of the rich bounties which infinite goodness has set before them, and that all are invited to partake thereof in the strongest manner, as manifestly appears to every rational mind that has the veil of darkness removed from off it: so no description of mankind, as to gifts, &c. are exempt from the temptations and snares of the world, the flesh, and the devil; therefore it is that, for the greater part of those who are partakers of the greatest temporal blessings and mental gifts, they, being off their guard, fall under the temptations that beset them; then
pride,

pride, which rules all the corrupt passions, blinds the minds, and hurries the will to pursue whatever evil Satan presents; for so it is written, "Not many wise men after the flesh, not many mighty, not many noble, are called;" that is, as I conceive, who answer and are obedient to the call, they being so immersed in the sinful cares and pleasures of time and sense, that, "having ears they hear not, and eyes they see not," and therefore obey not the voice that from every quarter calls them to life and immortality; and this is that which caused the Psalmist to say, "They set their mouth against the heavens, and their tongue walketh through the earth," &c. that is, bid God defiance, and will not hearken to his voice; and, as a just reward of their sin, it is further said, "thou didst set them in slippery places,"—all degrees of mankind are surrounded with snares and temptations, and, for want of watchfulness, are made captives to sin and Satan; but most frequently where the greatest blessings of a temporal nature are given, such is the deceitfulness of sin in the hearts of men, that, instead of their having a due effect in drawing their hearts to God in gratitude and love, the order of Nature is inverted,

verted, and man becomes an enemy to him. How many instances have we recorded of men, almost in every age, of the most exalted parts, as to natural endowments, who have discovered in their general conduct the basest of principles; some who have been great orators, and have been intrusted in the most exalted stations, who have proved in the end to be the greatest enemies to the public welfare, and from the basest motives publicly opposing both falsehood and truth? In opposing falsehood they have succeeded much: according to the old adage "set a thief to catch a thief," they knew how others should act, and were capable of discovering wherein they had acted wrong; and therefore, in order to prove them guilty of mismanagement, or some criminal offence, that they might turn them out of office, and themselves get in, no matter how they turned them out, if their necks were broken by the fall, so that their own ends were answered. In order to accomplish this design, they made use of all the powers of eloquence in support of truth and justice, that a stranger, when hearing them, would really think they were friends to what they profess; and their arguments were of such
force

force that they frequently brought over others to their opinions; from which they so won upon the minds of the unwary, that, having acted as they thought with sincerity, they put confidence in them, and consented to their being put into office; but ere long they were discovered not worthy to fill such stations, were turned out again, and their places filled with worthy characters, who had the public welfare at heart, and acted according to truth and justice as far as their power and abilities enabled them. Notwithstanding their adherence to true patriotism, they too met with as much opposition from their opposers, who, though men of great abilities, were not ashamed to oppose truth any more than falsehood. Thus have they acted in public life, and in private have lived in all manner of debauchery, seducing the unwary, especially youth; and thus it has been in different ages. If there be any such in the present age, may the Almighty convince them of their shameful error, and deliver them from these stronger than iron bands wherewith they are bound, and cause them to loathe the sordid trash on which they have hitherto been feeding, and to delight in solid and substantial food, such as is contained

in the books of creation, providence, and revelation! the holy meditation in which is the only nourishment the souls of men can receive.

I think Dr. Young, in his Night Thoughts, page 103, describes such characters as those before mentioned in the most beautiful manner:

Heart-merit wanting, mount we ne'er so high,
Our height is but the gibbet of our name,
A celebrated wretch when I behold.—
When I behold a genius bright and base,
Of tow'ring talents, and terrestrial aims,
Methinks I see, as thrown from her high sphere,
The glorious fragments of a soul immortal,
With rubbish mixt and glitt'ring in the dust.
Struck at the splendid, melancholy sight,
At once compassion soft, and envy, rise.—
But wherefore envy? Talents angel bright,
If wanting worth, are shining instruments
In false ambition's hand to finish faults
Illustrious, and give infamy renown.—

From a consideration of these lamentable realities it becomes every human being to pause, and consider how it is with himself; whether he was ever fed with real food, such as nourishes the soul to eternal life; and those who have fed, and often have had sweet repast, find that they stand in need of continual supplies; for as the body grows weak and faint,

faint, for want of continued nourishment, so does the soul likewise. Meditation on the perfections of God, prayer and praises to God for his goodness, are the duties of the children of men; and in these duties they are always assisted: though it may be sometimes not sensibly, still they improve while in the way of duty. From the neglect of being found in such practices, the Psalmist, in such pathetic language, exclaimed, "O that men
 " would praise the Lord for his goodness, and
 " for his wonderful works to the children of
 " men."—

How often do we find in the Scriptures that the heavens, the earth, and the seas, the sun, the moon, and the stars, are called upon to celebrate the praises of the infinite, incomprehensible Jehovah, in the person of Jesus Christ, particularly in Psalm cxlviii. In what manner is it to be understood that inanimate creatures are to praise the Lord? I conceive thus; That it is a call to mankind to listen carefully to the silent, but powerful and sweet praises they are continually declaring of God. The songs of praise which they sing, though silent to the sensual ear, are loud and melodious to the ear of the soul when truly awaken-

ed; they are songs expressive of the infinite love of God to the returning children of the rebellious race of man. They sing many songs of praise to the Lord; they sing of mercy and of judgments; they sing of the Lord's waiting to be gracious; of his patience, of his long-suffering, and forbearance; in a word, they sing of all the perfections of the ever-blessed God in Trinity.

I would again observe, that as the earth is fixed as to annual motion, the changing seasons of the year proceed from the sun's annual revolution round the earth, and the earth's diurnal motion is the cause of day and night. The laws that govern the motions of the sun and the earth are not to be found in any of the courts of men, but remain with God; and they move according to his will, and not by any innate power of their own; so likewise man, in his fallen state, is no more able to move towards God than the earth has power of itself to move from the foundation on which it is fixed, which reasonably appears to be the centre of gravity, and what in the Scriptures is said to be *nothing* on which the earth hangeth. Therefore man is taught in the Scriptures to know, that by nature he is in a lost and miserable

able

able state, and liable to eternal death and misery; and that it is in God alone, through Christ his Saviour, that he can be raised from his low and miserable state; for it is God that worketh in man both to will and to do, and that of his own good pleasure—and woe be to those who are left to their own will, who do not believe in Christ, nor flee to him for refuge; for, as it has been observed by some good men, if our first parents, when in innocence, were foiled by Satan, how can any of their race expect to stand against him in their own strength, who have none, having lost all by sin?

Thus have I endeavoured to shew the real benefit that will arise from a proper study of the heavenly bodies; and I hope these few hints will not prove in vain. As the heavens are a large field for speculation, so, if they are studied in consort with the Scriptures, they will be a source of consolation also.

I shall now endeavour to prove, that the book of Providence declares the same truths as the Scriptures do, with respect to the Divinity of Christ; that it witnesseth to the truth of the Scriptures in the strongest manner that can be expressed. As all men, (except those darling mortals that

deny the being of God) acknowledge that God rules and governs the world, both in mercy and judgment. Now, as the Scriptures declare Christ to be God, that he created all things, and that without him was not any thing made that was made, they also declare that the promises and threatenings therein contained are the promises and threatenings of God in Trinity, and that to Christ, as God, all power was given by the Father. The Scriptures being so clear and full to prove the doctrine of the Trinity, Satan has so far prevailed as to blind the minds of thousands by his wiles, who therefore deny them to be the word of God, as revealed to his servants the prophets, &c. Now as God declared his threatenings to men on account of their disobedience, and they paid no regard to them, and judgment took place both as to time and manner in the deluge of the whole world, when the whole race of man, except Noah and his family, were destroyed in these respects, the Scriptures were exactly fulfilled; for it is written, that man's days shall be an hundred and twenty years; and so as to manner. The flood came and swept them all away; but before this threatened vengeance took place, the long-suffering

suffering of God appeared inasmuch as repentance towards God, and faith in the Lord Jesus Christ, was preached unto them while Noah was preparing the ark, 1 Peter c. iii. v. 19, 20. and c. iv. v. 6. Is not the next fulfilment of this threatening a full proof that the Scriptures are the word of God; the second person in the ever-blessed Trinity? Again, as to the promises made to Abraham and to his seed: the exact time of his offspring being in Egypt, and their deliverance; their travels in the wilderness; the promises and threatenings by the mouth of Moses; their exact fulfilment in the destruction of Jerusalem, and their captivity; their return from captivity, according to the word of God; also as to the judgments denounced against Babylon, and the enemies of the church, and their fulfilment; the promises and prophecies of Christ the Messiah, and their fulfilment, and likewise the fulfilment of the prophecies of the Old Testament, which have taken place, respecting the church and her enemies in gospel times; all these are undeniable proofs that the Scriptures are the word of God, and that Jesus Christ is the God of Providence. And the numerous appearance of Christ as the God of Providence

Providence to his church and people in every country where his name was professed and relied on, especially in Great Britain, is manifest to any person who consults his history. There are many, it may be many thousands, who will not believe the truth of the Scriptures with respect to the universal deluge of the earth; whereas there is the strongest evidence of its authenticity to be found in most parts of the world, especially in those places where the soil is of a sandy gravelly nature, and near rivers, where the rapidity of the waters were so great, that as they subsided they made channels, by carrying the earth before or with them, thereby causing eddies, which raised those little hills that in many places remain nearly the same as they are near Woolwich, where, in digging for sand, there are different strata before they reach it, one of which is mud and shells; these strata appear to the clearest view to be the sediment of the waters that were thus agitated when the fountains of the great deep were broken up, and which caused great quantities of shell-fish, the waters at the bottom of the sea being disturbed, to be thrown upon land:—and I have been told that shells are to be found on the

Blue Mountains at Jamaica, Thus this awful judgment has left a faithful testimony to the world of the truth of God's word, and that it was inflicted on those who sinned against the mercy of God in Christ, the God of the world, by whose word this judgment was denounced.

Similar to this awful judgment denounced in the Old Testament, and awfully fulfilled by the God of Providence, is that mentioned in the New by our blessed Lord, where he predicts the destruction of Jerusalem, and the dispersion of the Jews, for their rejection of the Son of God, the true Messiah, of whom the Scriptures of the Old Testament testified.— Did not the judgment take place? Was not Jerusalem destroyed? Were not the Jews dispersed? Are they not to this day a scattered people throughout the habitable parts of the earth more or less? And are they not, like the fossil shells, in a kind of strata, distinct from all the rest of mankind, and will remain so until the accomplishment of the prophecies contained in the Scriptures concerning them? Now, from the nature of things, which carry their own evidence with them, to prove their realities, the truths concerning them are established,

ed, and will remain so, notwithstanding there may be men, blinded by the cunning craftiness of Satan, who will deny the truth, notwithstanding it is supported with such strong evidence; for, what stronger proof can be required than that the Scriptures are of Divine origin; that they were revealed to mankind by the Spirit of God; that the Godhead is a Trinity in Unity; and that all power, both in heaven, earth, and hell, is committed unto the second person in the ever-blessed Trinity, who condescended to take upon him our nature, and thereby became God and man in one person? And this one person, Jesus Christ, the Son of God, is the God of Providence, and governs the world, and declares his mind and will in his holy word, and brings all things to pass in his providence which he has declared to do in his word. All which will confound the daring wretch who dares deny his eternal powers and Godhead, and the truth of his holy word, which he hath condescended to lay before mankind, in such a clear point of view, that all his works in nature, providence, and grace, point directly to him.—But though there were multitudes of unbelievers who heard the threatenings denounced by

by the Almighty from the mouth of his servants; their unbelief did not prevent the judgment from being executed; so neither will the unbelief of men now, who reject the counsel of God against themselves, that counsel which is contained in the book of Nature, Providence, and Revelation—prevent the due execution of all threatenings denounced in God's most holy word against all impenitent sinners.

It is said that the fossil shells that are found buried at great depth in the earth make an excellent manure, especially in cold clayey lands:—from which I would observe, that a due consideration of these two remaining marks of God's displeasure against those despisers of Christ and his gospel, will prove an excellent manure to cold and clayey minds, and will conduce much to strengthen the belief of the Divine origin of the Scriptures.—Can a person behold these shells as they lie in the strata before they are removed from the place, and consider them, without being led to the cause of their coming there? When we read the awful account of the flood, and its cause, does not the sight of these shells confirm the report the Scriptures give?—Again, when we read in the Scriptures that the children of Israel for

their sins against the God of their fathers, in rejecting him, were threatened to be rejected also, and scattered over the whole earth, and that the Gentiles should embrace the Saviour whom they refused, and all the ages before the events spoken of took place—can we then behold the Jews, in their present circumstance, as distinct from the rest of mankind throughout the earth, although they dwell in the midst of cities or people, yet without a government of their own, and not be convinced of the truth of the Scriptures in this peculiar mark of God's dealing in his providence with his people? How does a due consideration of these things confirm and strengthen the faith of the real Christian in the truths they contain?

Thus I have, according to my weak abilities, endeavoured to evince the harmony that subsists between these three books, which God, in his infinite goodness, has bestowed upon mankind, in order that they, by duly reading in, and contemplating on, the one great subject contained in all of them, may be taught and prevailed on to turn unto Him from whom, by transgression, they have revolted. The style that these books are written in dif-

fers from all others; for though it be the most grand and lofty, yet at the same time is the most plain and easy to be understood by the meek and humble; yea, even wayfaring men, though fools, may read and understand abundantly the Author's meaning in those mysterious things, to which many parts relate, whereby they become truly wise, and enjoy much solid peace and comfort in the hope of their being admitted into the presence of that God who wrought such wonders for them—while men of the greatest natural parts and learning, who live as without God in the world, seeking their own glory and not his, amusing themselves with the surface, and not caring to dive into the true meaning, remain often strangers to the Divine truths recorded in these sacred volumes.

T H E E N D.

from all others; for though it be the most
plain and easy to be understood by the most
ignorant, **E R R A T A**;

Page. Line

- 5 1, for lower part read upper part.
- 5 8, 9, for arrive at the 90° upward, or the upper
part of the orbit, read arrive at 90° in the
lower, or lower part of the orbit.
- 13 3, for, that observer of the orbit on the outside
read that observer on the outside of the orbit.

*The following observation having struck my thoughts after this
work was in the press, let it be read after the period at
the bottom of the 38th page:*

How the earth's motion bearing some proportion to the
velocity of light is compatible with the belief that the
orbit of the earth subtends from the distance of the stars
(an angle not quite two seconds) let reason judge: if it be
considered that the bright star in the head of Draco is
situated nearly on that meridian which is 90° from each
equinoctial point, the distance of the star at each obser-
vation must be nearly the same; therefore, Dr. Bradley's
amazing sagacity was nothing more than an amazing mis-
take.—With regard to any fixed star that is in the equinox,
and the earth in her supposed orbit is in the equinox also,
and diametrically opposite to the star; if this star were ob-
served at both seasons when the earth is in the different
equinoctial points, it would appear strange if the star did
not appear in the same point of view as the two equinoctial
points, and the stars are all in one direct line.—More
might be offered, but if these observations are duly weighed,
I trust enough is said.

